TABLE 3

INFECTIOUS DISEASE NOTIFICATIONS FOR 1994 BY PUBLIC HEALTH UNIT, RECEIVED BY 27.1.94

Condition	CSA	SSA	ESA	SWS	WSA	WEN	NSA	CCA	ILL	HUN	NCR	NER	OFR	SWR	SER	U/K	Total
AIDS	–	–	–	–	1	–	–	–	–	–	1	–	–	–	–	–	2
Arboviral Infection	–	–	–	–	–	–	–	–	–	–	3	1	–	–	–	–	4
Gonorrhoea	–	–	2	–	2	–	–	1	–	–	–	3	2	–	–	–	10
H. influenzae epiglottitis	–	1	–	–	–	–	1	–	–	–	–	–	–	–	–	–	2
H. influenzae infection (NOS)	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	1
H. influenzae meningitis	–	–	–	–	–	–	1	–	–	–	–	–	–	–	–	–	1
H. influenzae septicaemia	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	1
Hepatitis A – acute viral	–	–	4	–	–	–	1	–	–	2	1	4	–	–	–	–	12
Hepatitis B – acute viral	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	1
Hepatitis B – unspecified	10	5	4	1	4	–	12	–	1	3	–	1	–	1	–	–	42
Hepatitis C – acute viral	–	–	–	–	–	–	–	–	–	–	–	–	–	1		–	1
Hepatitis C – unspecified	5	4	21	–	4	1	11	3	–	9	13	4	–	8		1–	84
Hepatitis – acute viral (NOS)	–	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	1
HIV infection	4	–	8	2	–	–	–	–	–	–	–	–	–	–	–	8	22
Leptospirosis	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–	1
Malaria	–	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	1
Measles	5	1	4	1	9	3	4	1	1	2	29	3	9	–	1	–	73
Meningococcal meningitis	–	1	–	–	1	1	–	–	–	–	–	–	–	–	–	–	3
Meningococcal septicaemia	–	–	–	–	–	–	–	1	–	–	–	–	–	–	–	–	1
Mycobacterial tuberculosis	–	1	–	–	3	–	–	–	–	1	–	–	–	–	–	–	5
Pertussis	1	2	–	–	1	–	3	–	1	–	20	–	–	–	1	–	29
Q fever	–	–	–	–	–	–	–	–	–	1	1	1	–	–	–	–	3
Rubella	–	–	–	–	2	–	1	–	–	–	–	–	–	–	–	–	3
Salmonella (NOS)	–	4		–	3	1	1	1	–	4	–	2	3	2	–	–	21
Salmonella bovis morbificans	–	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	1
Salmonella typhimurium	–	–	4	–	3	–	1	–	–	–	–	–	–	–	–	–	8
Syphilis	–	–	4	–	1	–	3	1	–	–	2	–	2	–	–	–	13

TABLE 4

SELECTED INFECTIOUS DISEASE NOTIFICATIONS BY PUBLIC HEALTH UNIT, RECEIVED BY 27.1.94

Condition	CSA	SSA	ESA	SWS	WSA	WEN	NSA	CCA	ILL	HUN	NCR	NER	OFR	SWR	SER	Total
H. Influenzae epiglottitis	–	1	–	–	–	–	1	–	–	–	–	–	–	–	–	2
H. Influenzae meningitis	–	–	–	–	–	–	1	–	–	–	–	–	–	–	–	1
H. Influenzae septicaemia	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	1
H. Influenzae infection (NOS)	–	1	–	–	–	–	1	–	–	–	1	–	–	–	–	1
Measles	5	1	4	1	9	3	4	1	1	2	29	3	9	–	1	73
Pertussis	1	2	–	–	1	–	3	–	1	–	20	–	–	–	1	29
Rubella	–	–	–	–	2	–	1	–	–	–	–	–	–	–	–	3

TABLE 5

FOODBORNE INFECTIOUS DISEASE NOTIFICATIONS BY PUBLIC HEALTH UNIT, RECEIVED BY 27.1.94

Condition	CSA	SSA	ESA	SWS	WSA	WEN	NSA	CCA	ILL	HUN	NCR	NER	OFR	SWR	SER	Total
Salmonella (NOS)	–	4	–	–	3	1	1	1	–	4	–	2	3	2	–	21
Salmonella bovis morbificans	–	–	1	–	–	–	–	–	–	–	–	–	–	–	–	1
Salmonella typhimurium	–	–	4	–	3	–	1	–	–	–	0	–	–	–	–	8

ABBREVIATIONS USED IN THIS BULLETIN:

CSA Central Sydney Health Area, SSA Southern Sydney Health Area, ESA Eastern Sydney Health Area, SWS South Western Sydney Health Area, WSA Western Sydney Health Area, WEN Wentworth Health Area, NSA Northern Sydney Health Area, CCA Central Coast Health Area, ILL Illawarra Health Area, HUN Hunter Health Area, NCR North Coast Health Region, NER New England Health Region, OFR Orana and Far West Health Region, CWR Central West Health Region, SWR South West Health Region, SER South East Health Region, OTH Interstate/Overseas, U/K Unknown, NOS Not Otherwise Stated.

Please note that the data contained in this Bulletin are provisional and subject to change because of late reports or changes in case classification. Data are tabulated where possible by area of residence and by the disease onset date and not simply the date of notification or receipt of such notification.

FIGURE 2

HAEMOPHILUS INFLUENZAE TYPE B, NSW FEBRUARY 1993–JANUARY 1994

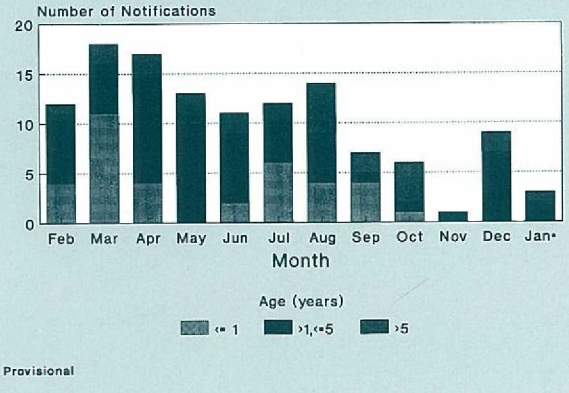

TABLE 6

INFECTIOUS DISEASE NOTIFICATIONS BY SELECTED MONTH OF ONSET NOVEMBER 1993 – JANUARY 1994

Condition	Month			
	Jan 94	Nov 93	Dec 93	Total
Adverse event after immunisation	1	–	1	2
AIDS	5	28	33	66
Arboviral infection	10	16	11	37
Cholera	–	–	1	1
Foodborne illness (NOS)	1	13	8	22
Gastroenteritis (instit.)	1	73	24	98
Gonorrhoea	16	33	41	90
H influenzae epiglottitis	2	–	3	5
H influenzae infection (NOS)	1	–	1	2
H influenzae meningitis	1	1	3	5
H influenzae septicaemia	1	–	1	2
Hepatitis A – acute viral	20	40	33	93
Hepatitis B – acute viral	–	11	5	16
Hepatitis B – unspecified	86	408	294	788
Hepatitis C – acute viral	1	5	–	6
Hepatitis C – unspecified	174	770	607	1551
Hepatitis D – unspecified	1	–	1	2
Hepatitis, acute viral (NOS)	1	–	–	1
Hydatid disease	–	2	–	2
Legionnaires' disease	1	9	5	15
Leptospirosis	1	1	1	3
Listeriosis	–	1	1	2
Malaria	3	7	5	15
Measles	99	589	314	1002
Meningococcal meningitis	3	12	9	24
Meningococcal septicaemia	1	5	4	10
Mumps	–	3	3	6
Mycobacterial – atypical	–	27	7	34
Mycobacterial infection (NOS)	1	16	9	26
Mycobacterial tuberculosis	8	23	15	46
Pertussis	48	308	184	540
Q fever	6	28	22	56
Rubella	3	121	25	149
Salmonella (NOS)	32	89	39	160
Salmonella bovis morbificans	1	1	3	5
Salmonella typhimurium	11	11	18	40
Syphilis	26	93	70	189
Tuberculosis – non active	–	6	5	11
Typhoid and paratyphoid	–	1	2	3
Total	566	2751	1808	5125

NOTIFICATIONS

HAEMOPHILUS INFLUENZAE TYPE B

The immunisation program against *Haemophilus influenzae* type B, introduced in July 1993, is already demonstrating excellent effect on the epidemiology of this infection. No notifications for *Haemophilus influenzae* type B have been received for the past three months for infants. Only three notifications were received for January, for a rate of 0.6/100,000 population. This compares with a notification rate of 2.0/100,000 population for January 1993.

PERTUSSIS (WHOOPING COUGH)

The pertussis notification rate for the State for January was 4.1/100,000 population. This compares with a rate of 22.2 for 1993. North Coast Public Health Unit (PHU) received 14 notifications at a rate of 44.2/100,000 population.

Fifteen per cent of notifications were for children under five years of age. A further 55 per cent of notifications were for school-aged children.

MEASLES

The notification rate for the State is 9.2/100,000 population. This compares with a rate of 38.5 for 1993. The North Coast PHU received 21 notifications at a rate of 66.3/100,000 population.

Measles notifications in Western Sydney peaked in epiweek 44 of 1993. The infant measles immunisation schedule in the outbreak-affected areas (Blacktown and Penrith) reverts to 12 months of age on March 1.

The mean age for notifications was 7.0 years (range six months to 19 years). Eleven per cent of notifications were for neonates and infants. Fifty-six per cent of notifications were for children over the age of five years, while 16 per cent were for people 12 years and older.

From July 1 this year the schoolgirl rubella program is expected to be replaced by a universal schoolchild measles-mumps-rubella program.

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TABLE 7

NOTIFICATIONS OF NON-NOTIFIABLE SEXUALLY TRANSMITTED DISEASES JANUARY-DECEMBER 1993
(Diagnoses from sexual health centres unless otherwise stated in footnote)

* First diagnosis; 1. 01/01/93-31/12/93; 2. 01/01/93-30/11/93; 3. 01/01/93-30/06/93; 4. 01/01/93-31/08/93; 5. No SHC in Region; 6. Laboratory and SHC data 01/01/93-30/11/93; 7. No SHC in Region. Data from GP network 01/01/93-31/10/93.

AHS Infection		CSA[1]	SSA[2]	ESA[1]	SWS[1]	WSA[2] + WEN	NSA[2]	CCA[2]	ILL[3]	HUN[4]	NCR[2]	NER[1]	OFR[4]	CWR[5]	SWR[6]	SER[7]
Chlamydia trachomatis	Male	3	4	96	7	29	3	–	8	11	2	4	13	–	12	
	Female	1	5	75	10	22	1	1	4	32	2	15	13	–	27	
	Total	**4**	**9**	**171**	**17**	**51**	**4**	**1**	**12**	**43**	**4**	**19**	**26**	–	**39**	**4**
Donovanosis	Male	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
	Female	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
	Total	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
*Genital herpes	Male	10	13	351	3	42	12	7	7	21	5	3	3	–	3	
	Female	10	12	214	2	24	3	9	8	24	6	9	5	–	17	
	Total	**20**	**25**	**565**	**5**	**66**	**15**	**16**	**15**	**45**	**11**	**12**	**8**	–	**20**	**3**
*Genital warts	Male	55	86	727	127	211	33	31	62	93	41	16	20	–	2	
	Female	29	66	303	49	85	19	14	25	37	23	25	15	–	1	
	Total	**84**	**152**	**1030**	**176**	**296**	**52**	**45**	**87**	**130**	**64**	**41**	**35**	–	**3**	**15**
Nongonococcal urethritis	Male	11	15	748	32	357	14	15	52	69	20	6	13	–	1	
	Female	2	–	–	3	3	4	5	–	–	4	–	1	–	–	
	Total	**13**	**15**	**748**	**35**	**360**	**18**	**20**	**52**	**69**	**24**	**6**	**14**	–	**1**	–
Lymphogranuloma venereum	Male	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
	Female	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
	Total	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

► Continued from page 19

FOODBORNE ILLNESS

Notifications of salmonella were received from 10 PHUs in the January reporting period. A total of 30 (5.1/100,000 population) notifications was received in this period. In the same period last year 16 (2.7/100,000 population) notifications were received. The highest rate of notifications of 6 (1.0/100,000 population) occurred in the Western Sydney and Wentworth Areas. It should be noted that these data are only provisional, as the final number of notifications for January 1993 was 123 (20.8/100,000 population).

The Microbiological Diagnostic Unit, University of Melbourne, where *Salmonella typhimurium* phage typing is done in association with the National Salmonella Surveillance Scheme, notified Epidemiology Branch of an unusual cluster of 13 cases of *Salmonella typhimurium* phage type 9 with isolation dates between January 2 and January 27. Only two notifications of *S. typhimurium* phage type 9 were received in January 1993. No geographic relationship is evident except for three cases from a small community in the Illawarra Area.

Two apparently related cases of listeriosis — one isolated on January 27 in an 80-year-old female and the other on January 30 in a 31-year-old male — are being investigated by Eastern Sydney PHU. Both cases are immuno-compromised individuals.

IMPROPERLY STORED SPIT ROAST: THE CAUSE OF A FOODBORNE OUTBREAK

I Beer, MJ Ferson, Eastern Sydney Public Health Unit

The host of an adult's birthday party contacted the Public Health Unit to report suspected food poisoning among a number of guests. Results of the investigation into the source of illness, including epidemiological analysis, microbial examination of foodstuffs and inspection of food handling methods, are outlined in the following report.

Methods

A guest list and menu were obtained and a questionnaire seeking demographic, food and illness information was prepared. Those who attended were contacted and interviewed by telephone. A case was defined as any person who developed gastrointestinal symptoms within 48 hours of the party. The surveys were analysed using EpiInfo software. Food samples were collected for routine examination by the NSW Health Department's Division of Analytical Laboratories.

Results

Food preparation

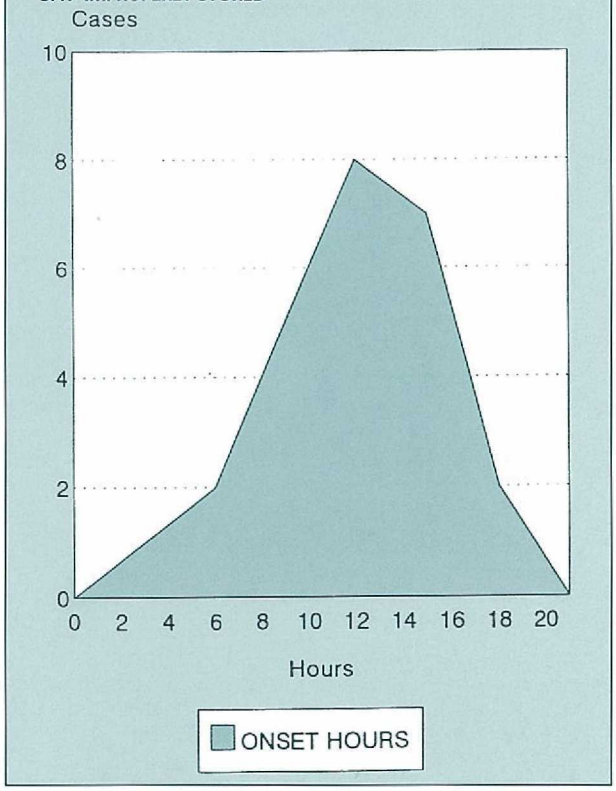
Most of the foods served at the party were prepared by family members. The spit roasts, consisting of a large cut of beef and legs of pork, were cooked and reheated at the function by a chef employed by a commercial caterer. Left-over meats were submitted for microbial analysis.

Inspection of the caterer's premises revealed that the preparation areas were confined and dirty as a result of renovations. In particular the thermometer used to check the temperature of the meat had a build up of grease covering the probe.

The beef had been cooked at very low heat (80°C) for approximately 18 hours, by which time the core temperature had reached 60°C. The legs of pork had been cooked at a high temperature for about four hours until the core temperature reached 60°C. Both meats had been allowed to cool at room temperature after cooking and prior to reheating at the party, for nine hours in the case of the beef and three hours for the pork.

FIGURE 3

EPIDEMIC CURVE, FOODBORNE OUTBREAK ASSOCIATED WITH SPIT IMPROPERLY STORED



Epidemiological analysis

Interviews were conducted with 41 (55 per cent) of the 75 guests. Of the 25 cases, all suffered diarrhoea, 76 per cent abdominal cramps and 32 per cent nausea. Nobody complained of nausea. The mean incubation period calculated from the hour the meal started until the onset of first symptom was 12±4.0(SD) hours, range 5-19 hours (Figure 3). The mean duration of symptoms was 24±15 hours (range 3-56).

Food-specific odds ratios and corresponding P-values were calculated. The only foods significantly associated with illness were the roast pork and roast beef (P=0.006). The importance of these two foods could not be separated as all guests ate either both roasts or neither.

Microbial examination

Stool specimens were collected from two guests still recovering from the illness. They were cultured according to routine procedures for *Salmonella*, *Shigella* and *Campylobacter*, and found to be negative for these pathogens.

Left-over meat, consisting of large portions of beef and pork still on the bone, were cultured separately for *Clostridium perfringens*, *Salmonella* and *Escherichia coli*. *C perfringens* was found in all samples at levels ranging from 4.0×10^6 to 3.3×10^7 per gram. *E coli* was found at high levels in four samples ranging from 9.3×10^2 to $>1.0 \times 10^5$ per gram.

When *C perfringens* was found in the meats, the clinical laboratory was contacted to determine whether it was possible to look for the bacterium in the stool specimens. However, as these clostridia are normally present in the bowel of healthy persons they are not sought in faecal specimens.

Discussion

The short incubation period, duration of symptoms and predominance of diarrhoea amongst cases are consistent with *C perfringens* type A food poisoning[1,2]. No other pathogens were detected in either the stools or food samples. Concentrations of *C perfringens* were in excess of the 10^6 per gram required to produce enough toxin to cause food poisoning in otherwise healthy individuals[2]. The epidemiological results implicated the pork and beef as the most likely foods to have caused illness.

Most outbreaks of *C perfringens* are associated with improperly cooked, stored or reheated meat products. In these outbreaks it is common to find that the meat has been stored for long periods of time at ambient temperatures. In this case, the roast pork and beef were not cooked to a core temperature of at least 75°C required to kill vegetative cells[2,3], and had been kept at room temperature for several hours. Spores would have survived the cooking process, then germinated and multiplied rapidly during the cooling and reheating of the spits.

Conclusions

In this outbreak of *C perfringens* food poisoning, proper food preparation and storage techniques were not observed and temperature controls were grossly lacking.

Food safety measures need to consider the ability of *C perfringens* to multiply at temperatures of up to 50°C and to form spores. Since multiplication does not occur at refrigerator temperatures, virtually all cases of food poisoning are caused by failure to properly refrigerate cooked foods, especially those stored in large portions.

Spores present in raw meat can survive cooking and resume cell growth when the meat cools. The enterotoxin produced by *C perfringens* type A is destroyed if heated to 60°C for ten minutes[2,3]. Cooked meat should be maintained at a temperature above 60°C or below 5°C during storage. Reheated meats should reach a core temperature of 75°C immediately before serving to destroy vegetative cells.

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1. Roach RL, Sienko DG. *Clostridium perfringens* outbreak associated with minestrone soup. *Am J Epidemiol* 1992;136:1288-1291.
2. Lund BM. Foodborne disease due to *Bacillus* and *Clostridium* species. *Lancet* 1990; 336:982-986.
3. Labbe RG. Bacteria associated with foodborne diseases, *Clostridium perfringens*. *Food Technol* Apr 1988:195-196.

TYPHOID FEVER ACQUIRED AT HOME

Mark J Ferson and Lorraine C Young,
Eastern Sydney Public Health Unit

Case one

The Victorian Health Department informed the Eastern Sydney PHU on December 6 of a case of typhoid in a young child living in Melbourne. Two weeks before the onset of illness, the child had spent a week with family in Sydney. Neither the index case nor his contacts had recently travelled overseas. Stool specimens were collected from all the child's family and household contacts in Melbourne. The child's mother became ill with typhoid 18 days after the onset of illness in her child. The PHU followed up the four family members living in Eastern Sydney. *Salmonella typhi* was isolated from three of four specimens from the 53-year-old grandfather living in Sydney. He had spent most of his life in Southeast Asia, and although he had no history of typhoid fever, one of his sons had had typhoid fever as a child, 16 years ago. The grandfather was about to have surgery for gall stones, but this was deferred pending antibiotic treatment of his typhoid carrier state.

Case two

The Prince of Wales Children's Hospital notified the PHU on December 17 of the growth of *Salmonella typhi* from the blood of a three-year-old girl with an eight-day history of anorexia, vomiting, watery diarrhoea and high fever. Neither the child nor other family members had recently travelled overseas. The PHU arranged collection of stool specimens from the household, which consisted of parents, two siblings, a grandmother and an uncle. The organism was isolated from two specimens obtained from the 68-year-old grandmother, who was born in Greece and remembers having typhoid fever as a child.

Discussion

Between January 1991 and December 1993, 31 cases of enteric fever were notified to Eastern Sydney PHU. These consisted of 22 (71 per cent) cases of typhoid, 6 (19 per cent) of paratyphoid A and 3 (10 per cent) of paratyphoid B. There were 19 (61 per cent) males and 12 females; ages ranged from 3-68 years, and 25 (81 per cent) were individuals of 15 years and over.

The vast majority of cases had travelled overseas (25), generally to destinations in Asia or South America, or had been born overseas (3). Two cases, including Case two, had most likely acquired the infection from a household contact. In one case the source of infection was not determined.

The cases described highlight the importance of obtaining faecal specimens from all household contacts when the source of the infection in the index cases is not readily apparent.

IMMUNISATION RATES IN THE ILLAWARRA

Illawarra School Health Service and the Illawarra Public Health Unit

Few measures in public health are as effective as childhood immunisation programs. However the success of these programs depends on high immunisation coverage, and assessing this coverage can be difficult.

Obtaining accurate estimates of the immunisation status of children in NSW is complicated by the fact that there is no standardised immunisation surveillance system[1]. Childhood immunisation services are provided by general practitioners (GPs), local government and community health services. The Australian Bureau of Statistics (1983)[2] found that about 60-70 per cent of immunisations are conducted by GPs and the remainder by community programs. Collecting and collating reliable data on immunisation coverage from all these sources has obvious problems.

One method of assessing childhood immunisation coverage is by accessing the immunisation information collected by the School Health Services. In the Illawarra this information is routinely collected on the immunisation status of all school entry children. The School Health Service is also responsible for implementing the Year Seven schoolgirl rubella program and the Adult Diphtheria Tetanus (ADT) and Sabin boosters for Year 10 students.

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► Continued from page 21

The high school data are very reliable and easily accessed. The limitation of the school entry information is that it relies on parental recall, as parents are not required to provide documented evidence of immunisation status, and it does not provide any information on age-appropriate immunisation. This will change after 1994 with the introduction of the Public Health (Amendment) Act 1992. The Act will require parents of children starting school in the kindergarten class to provide documentation of immunisation status in the form of an immunisation certificate and of children enrolling in child care centres to provide documentation of age-appropriate immunisation. The introduction of this legislation should provide more reliable data.

Results

School entry immunisation

The school entry data include all primary schools in the Illawarra Area, which extends from Helensburgh in the north to Gerringong in the south. This is a total of 53 primary schools with a kindergarten enrolment of 3,043. Of this number 2,543 (83.6 per cent) were fully immunised, 456 (15 per cent) partly immunised and only 18 (0.5 per cent) not immunised at all. There were 26 children of the total enrolment of 3,043 who did not return their screening cards to the school. Table 8 shows the immunisation status of the Illawarra's school entry children for 1992.

The school health screening card requests a yes/no/not sure answer as to whether the child had three immunisations as a baby, a booster at 18 months, a booster at or before school entry and a measles/mumps vaccination. Table 9 lists the immunisation, the number of school entry children who were reported to be fully immunised for that immunisation in 1992 and shows the National Health and Medical Research Council (NHMRC) targets to the year 2000[3].

TABLE 8

1992 IMMUNISATION STATUS OF ILLAWARRA'S SCHOOL ENTRY CHILDREN

Immunisation status	Number	
Fully immunised	2,543	83.6%
Partially immunised	456	15.0%
Unimmunised	18	0.5%
No record	26	0.8%
Total	3,043	100%

TABLE 9

IMMUNISATION CATEGORY, NUMBER OF CHILDREN IMMUNISED AND NHMRC TARGETS TO THE YEAR 2000

Immunisation	Number immunised	NHMRC targets 1994	1996	2000
Three immunisations as a baby	3,008 (99.7%)	90%	95%	99%
18-month booster	2,977 (98.6%)	90%	95%	99%
Preschool booster	2,858 (94.7%)	90%	95%	99%
Measles/mumps	2,709 (89.7%)	90%	95%	99%

TABLE 10

ILLAWARRA SCHOOLGIRL RUBELLA IMMUNISATION PROGRAM 1993

Response	Number and percentage of girls	
Immunised by SHS*	1,329	80%
Immunised by GP	176	10%
Total immunised	1,568	90%

* SHS = School Health Service

TABLE 11

ILLAWARRA HIGH SCHOOL ADT/SABIN BOOSTER IMMUNISATION PROGRAM FOR 1993

Response	Number and percentage of students	
Immunised by SHS*	2,331	74%
Immunised by GP	195	6%
Total immunised	2,526	80%

* SHS = School Health Service

SCHOOLGIRL RUBELLA AND THE ADT/SABIN BOOSTER PROGRAM

The Illawarra School Health Service coordinates the Year Seven schoolgirl rubella and the ADT/Sabin booster program in all high schools — both government and non-government — in the Illawarra Area. There are 23 high schools with a total enrolment of 1,678 Year Seven girls and 24 high schools with a total enrolment of 3,156 Year 10 students. Tables 10 and 11 show the response to information and consent forms sent home with Year Seven girls for the rubella program and Year 10 students for the ADT/Sabin booster program. Students absent on the day of immunisation are offered immunisation the next year.

Conclusion

The results obtained from the School Health Service indicate good immunisation coverage of children aged 5-15 years in the Illawarra, with 99.7 per cent of all school entry children having received all their baby (two months, four months, six months) immunisations, 98.6 per cent having received their 18-month triple antigen, 94.7 per cent their preschool booster and 89.7 per cent their measles/mumps. Ninety per cent of Year Seven girls were vaccinated for rubella and 80 per cent of Year 10 students received their ADT/Sabin boosters.

These results compare very well with the 1989-1990 National Health Survey conducted by the Australian Bureau of Statistics which found that only 53 per cent of children less than six years old had received full age-appropriate immunisation[4]. The Illawarra's immunisation rates are on target with the recommendation from the NHMRC's National Immunisation Strategy, which has set national goals for immunisation coverage to the year 2000. These include a 90 per cent coverage by 1994, 95 per cent coverage by 1996 and near universal coverage by 2000 of all children of school entry age for diphtheria, tetanus, pertussis, polio, measles/mumps/rubella and adolescent measles/mumps/rubella.

The introduction in NSW of school entry legislation for 1994 should increase the Illawarra's immunisation rate

of measles/mumps/rubella from 89.7 per cent to 95 per cent, allowing it to achieve the NHMRC's national goals.

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Q FEVER: SOUTH COAST DISTRICT

Warren Matthews, Peter Hlavacek, Greg Sam
South Eastern Public Health Unit

The South Eastern Public Health Unit investigated a cluster of 11 cases of Q fever on the NSW South Coast. All cases were diagnosed on clinical and epidemiological grounds and 10 were serologically confirmed.

All cases were at a party attended by 23 people on a beef cattle property on June 19, 1993. During the party the index case (the owner of the property) assisted in the birth of a calf. The calving was witnessed by most of those at the party. Strong winds prevailed at the time of the calving. There was no indication that the cow was diseased, and the birth was uncomplicated.

The index case developed symptoms consistent with Q Fever 12 days after the birthing. The acute phase of the illness lasted 10 days and was characterised by fever, headaches, generalised myalgia, malaise, depression and an enlarged liver. Within the ensuing 35 days a further 10 cases exhibited symptoms consistent with Q fever.

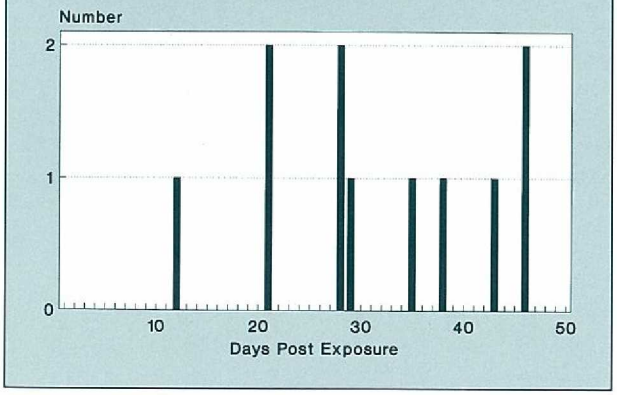
Discussion

The index case was most probably infected during the delivery of the calf on June 19, 1993. The cases who witnessed the calving were most probably infected through direct inhalation of contaminated aerosols post-partum. The cases who had not been at the calving were probably indirectly infected as no other direct exposure was reported.

A 37-year-old woman and her 22-month-old breastfed child were at the calving. The mother developed symptoms after nine days and the child some 21 days after her mother. This interval raises the possibility of secondary transmission via contaminated breast milk.

FIGURE 4

Q FEVER SOUTH COAST



Active surveillance of the local area identified three further cases unrelated to this event, however all had visited the property and developed symptoms within the 35-day period.

The Department of Agriculture's veterinary service states that the incidence of *Coxiella burnetii* in cattle and sheep is common and usually asymptomatic. Testing of beef cattle is not routinely performed. Testing for Q fever in the cow and calf involved in this episode is being undertaken.

While large outbreaks of Q fever are uncommon, a survey of literature revealed episodes similar to this outbreak. Kosatsky (1984) reports 12 people developing Q fever after contact with a cat which had just given birth.

Sporadic cases of Q fever in occupational settings have resulted in improved awareness among employees, employers and health professionals. Routine immunisation has been recommended to abattoir staff and individuals with clearly defined occupational risk.

Kosatsky T. Household outbreak of Q fever pneumonia related to a parturient cat. Lancet 1984; ii:1447-1449.
Benenson Abram S. Control of Communicable Diseases in Man. Fifteenth Edition, 1990.
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INVESTIGATION OF AN OUTBREAK OF HEPATITIS A LINKED TO A RESTAURANT

Sami Gounder, Gay Rixon and Helen Longbottom

In September 1993 the Northern Sydney Area Public Health Unit, with the assistance of the Western/ Wentworth Public Health Unit, investigated an outbreak of hepatitis A among a group of people who had eaten at the same restaurant.

A private laboratory noted a geographic cluster of four cases of hepatitis A. Subsequent investigation by the PHU, with the co-operation of general practitioners, revealed the cases were linked to a local restaurant. Active surveillance identified four other cases of hepatitis A also linked to the restaurant.

Review of the incubation periods of all cases showed it was possible they were linked to a single index case. Analysis of the food histories of the cases implicated a specific food preparation process.

Members of the PHU inspected the restaurant and interviewed the owner. There was no history of illness among restaurant staff and this was confirmed by a review of employment records. Serology on some restaurant staff did not show evidence of recent hepatitis A infection. A number of deficiencies was noted in the kitchen design and the food preparation and handling techniques. These were reported to the owner and the recommended changes have been implemented.

Although we were unable to identify the index case, our investigation showed a definite link between the cases and the restaurant. Since the investigation and the implementation of our recommendations there have been no further cases of hepatitis A linked to this restaurant. The investigation highlights the effectiveness of the notification system; the collaboration that is developing between the PHUs and private laboratories; and the difficulties in identifying the source of foodborne outbreaks.